several times daily, were taken during a period of sixteen months. The patient's hair and eyebrows had been snow white for twenty years, but about a year after the pilocarpine treatment had been begun it was noticed by the nurse that the eyebrows were growing darker, and that the hair of the head was darker in patches. At the time of death these patches were quite black.

The author discusses at some length the question of whether this change in color takes place in existing hairs, or whether it is necessary that new pigmented hairs shall grow in place of the old ones, which have fallen out. He considers it as proven beyond a reasonable doubt that the change may take place in hairs already existing, and believes that pilocarpine at times has the power in some manner to bring about this change.—*Journal of the Amer. Med. Assoc.*, December 21, 1889.

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## MEDICINE.

UNDER THE CHARGE OF

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### THE TREATMENT OF INFLUENZA.

ALISON (*Arch. Général*, August, 1889) considers influenza (grippe) an epidemic, infectious and probably contagious disease, characterized by irregular fever, inflammation and catarrh of the mucous membranes, nervous disturbances, and, finally, sweating and diarrhœa. He urges that the simple hygienic or symptomatic treatment be replaced by the administration of tannic acid in doses of twenty to thirty-five grains, in cachets, three times a day. In this way he treated twenty-three cases with recovery or relief. There occurs at once a diminution of the catarrh, the pain, and the nervous disturbances; sleep becomes quieter, and appetite returns. The perspirations and diarrhœa are influenced to a less degree. In all cases the remedy was well borne.

### DIPHTHERIA.

HENOCH (*Münch. med. Wochenschr.*, October 22, 1889, 747) reports his experience in 192 cases of diphtheria, from which number he carefully excluded all doubtful cases and all instances of scarlatinal necrosis. Scarlatinal diphtheria he considers an affection entirely distinct from true diphtheria. There are certainly instances in which scarlatina and diphtheria are combined, but either the former has appeared in cases of diphtheria well under way, or in the stage of decline; or the latter affection has developed in the later stages of scarlatina; certainly after the third or fourth day. Only in such cases of scarlatina does diphtheritic paralysis appear.

To distinguish diphtheria from angina lacunaris is often not possible until after continued observation. In some instances, indeed, it is impossible, namely, in those in which there occurs a deposition of fibrin in addition to the collection of pus in the depressions of the tonsils. In these cases the bacteriological examination would give certainty, if only we knew more accurately the nature of the bacillus and of the pathological anatomy of the affection. Diphtheria can, indeed, only be recognized positively when all or several of the cardinal symptoms are united; such as bilateral distribution of the membrane in the throat; involvement of the soft palate, uvula, etc.; albuminuria; involvement of the nasal cavities; contagiousness. Swelling of the glands and fever may appear in simple angina as well.

In 110 of the cases the membrane was confined to the pharynx; in 82 it spread to the larynx or still further down. In 12 of these latter tracheotomy was not performed on account of various contra-indications, while of the remaining 70 on whom the operation was done, 9 recovered; a percentage of 13. Many of the cases died of pneumonia, bronchitis, collapse, or heart failure, after the operation had apparently had a good result. Henoch attributes this low percentage of recoveries not to a severe form of the disease, but to the fact that more than half of the children were already suffering from different constitutional diseases, others were very poorly nourished, and many were quite young; while, in addition to these factors, the hygiene of the hospital was extremely bad. One great source of error in statistics is that writers include in them the cases of true croup, and thus greatly increase the apparent number of recoveries. Henoch has seen 36 cases of croup, of which 24 (66 per cent.) recovered after tracheotomy.

Of the 110 cases of pharyngeal diphtheria, 32 died—a favorable percentage.

The degree of fever proves nothing as to the severity of diphtheria. The swelling of the glands usually undergoes resolution; it is seldom that suppuration takes place as in scarlatina.

The diphtheritic membrane is of prognostic significance. Membrane on the hard palate is an exceedingly unfavorable sign, while involvement of the cheeks, tongue, lips, genitals, and anus also makes the prognosis bad. On the other hand, the spread of the membrane to the nose is not especially unfavorable even in bad cases.

Diphtheritic nephritis appears from the third to the fifth day, and is characterized by tube-casts, epithelium, and a few red blood-cells; in contradistinction to scarlatina, in which the number of blood-cells is large. The appearance of albumin not until a later period of the disease is very unusual, and cannot be affirmed unless the presence of scarlatina or the persistence of an early albuminuria can be absolutely excluded. Henoch has seen this late nephritis but twice.

Œdema is much rarer than in scarlatina; uræmia is very exceptional; affection of the joints has come to his observation but once. A croupy cough and stridor form no indications whatever for tracheotomy. The author has tried various methods of treatment, and found them all useless in severe cases.

## DIFFICULTIES IN THE DIAGNOSIS OF MEASLES WITH A DELAYED ERUPTION.

DUBRANDY (*Rev. Gén. de Clin. et de Thérap.*, 1889, No. 36, 583) speaks of the rarity of a delayed appearance of the eruption in measles, and says that in an epidemic in which he treated seventy-eight cases, he saw this delay in but three instances. In two of these the diagnosis could not during six days be made between measles and broncho-pneumonia, and in the third the disease lasted eight days before the eruption appeared, and showed that the case was not one of typhoid fever. In this case, the details of which he gives, there was neither cough nor ocular or nasal catarrh until the appearance of the rash.

## HEREDITARY CHOREA.

SUCKLING (quoted in *Practitioner*, November, 1889, from *Birmingham Medical Review*, September, 1889) reports a case of hereditary chorea in a previously healthy man, thirty-nine years old. For three to four years he had continually suffered from jerking of the hands and feet, stumbling, and "sniffing" due to a spasmodic action of the diaphragm. The shoulders were much affected, and the tongue and face slightly so. The speech was not involved and the knee-jerk was normal. The mother of the patient died at fifty-six years, having been choreic for sixteen years, and finally, quite helpless and unable to feed herself. Suckling also saw one of the patient's isters, aged thirty-eight years, who had had the disease for five years. The patient's youngest daughter, of about twelve years, was also affected by the disease.

The author describes the affection as distinctly hereditary, occurring chiefly in adults, and never skipping a generation. The movements can at first be directed by the will, but finally become quite involuntary, until the patient becomes bedridden and demented. The affection may remit or exacerbate, but never disappears.

## THE RELATION OF TABES AND OF PROGRESSIVE PARALYSIS TO SYPHILIS.

STRÜMPELL (*Wien. med. Presse*, 1889, No. 43, 1700) says that the existence of a connection between progressive paralysis and syphilis is admitted by the majority of neurologists, and that it is of great importance to determine exactly the nature of this relation. It has long been known that after acute infectious diseases certain secondary nervous affections may appear. These are characterized by the development, a certain time after the original disease is past, of degenerative conditions, usually in the peripheral nerves, whose clinical results make themselves known now as paralysis, now as ataxia, now in other ways. In all cases, however, the cause of the clinical symptoms is the same; namely, a simple degenerative atrophy of nerve fibres. The specific organized cause of the original disease never produces but the one result; as, for example, specific croupous inflammation in various parts of the body in diphtheria, and the specific lymphoid new formations in the organs in typhoid fever. This fact proves that the cause of the nerve degenerations is to be sought in the action of chemical products of disease, the results of the influence of the primary infection or its immediate effects. These substances need by no means be injurious metabolic products from the bacteria of the disease, but may as well be substances resulting from the degeneration and absorption of such effects of the disease as exudates and new-formed cells. This supposition would explain why it is that the nervous diseases in question almost never appear until after the original disease has run its course.

These same statements would seem to apply to the chronic infectious diseases. In tuberculosis there is often a widespread peripheral degeneration of the nerves, but never with the presence of tubercle bacilli or characteristic cellular new formations. Though we are far from understanding thoroughly the true character of syphilis, it would seem that here, also, we must distinguish between the immediate action of the bacilli, seen in the production of the specific gumma, and the secondary degenerative changes depending on the action of a chemical poison, and represented by the post-syphilitic nervous diseases, whose commonest, though by no means only forms, are tabes and progressive paralysis.

This explanation preserves the fact of the etiological relation of syphilis to these two diseases, without obliging us to wonder why antisyphilitic drugs are of no effect in their treatment; and we can understand, too, the existence of tabes as a primary systemic nervous affection, without having recourse to the unfruitful and untenable assumption of a primary alteration of the vessels to explain its origin.

Finally, the intimate connection of tabes with progressive paralysis is made more clear by this theory. Both are but different localizations of the same pathological process; and their frequent occurrence with and after each other is not the combination of two different diseases, but the complete development of the action of one and the same pernicious process.

## THE CONDITION OF THE WEIGHT OF THE BODY IN PSYCHOSES.

FÜRSTNER (*Wien. med. Presse*, 1889, No. 43, 1702) distinguishes three groups of cases of the psychoses, as regards the variations of the body weight:

1. Those who have had vigorous normal brains previous to the development of the psychoses.
2. Those strongly predisposed by heredity, or suffering a relapse.
3. Individuals suffering from "organic" psychoses.

In a series of cases in the first group there occurs a regular, abrupt fall in the weight-curve at the beginning of the psychosis, followed at a certain time by an equally regular rise, which often continues even after recovery. The absence of this condition on the disappearance of the psychic disturbance raises a doubt as to the reliability and permanency of the recovery. In another series of cases the fall is less regular and abrupt, and the succeeding rise is preceded by variations in the curve. These two curves are chiefly observed in primary, acute psychoses, and constitute a favorable prognostic sign.

In cases of the second group there is a short fall, then a continuing variation, and finally, in favorable cases, a rise; in chronic forms the curve remains at a middle height.

In progressive paralysis and other organic psychoses there is often, after a short fall, a gradual, continual rise; then, from a certain time, a regular fall, in spite of good sleep, abundant nourishment, and but little exertion of the muscles. This loss of weight, which is often very rapid, can only be explained by the existence of cerebral changes.

## THE INFLUENCE OF DILUTION ON THE ACTIVITY OF THE TUBERCULOUS POISON.

BOLLINGER (*Münch. med. Wochenschrift*, 1889, No. 43, 731) communicates the results of the important experiments conducted in his laboratory by Gebhardt during the past two years. As it has been shown by Hirschberger that 55 per cent. of all tubercular cows produce an infectious milk, the first step was to determine the infectiousness of the ordinary market milk. Samples obtained from 10 different places of sale, and inoculated on as many guinea-pigs, gave entirely negative results. Inoculations were next made with milk taken directly from the healthy udders of tubercular cows after their slaughter, and diluted to different degrees. It was thus found in three cases that dilutions of 1:40, 1:50, and 1:100, respectively, were required to destroy the virulence. Both these tests prove that the virulent milk of tubercular cows loses its infectiousness through a certain degree of dilution. The mixing of the diseased milk with that of many healthy cows thus lessens the danger, as also does the dilution usually employed in preparing milk for infants. Milk coming from large establishments is always, therefore, to be preferred to that from a single cow.

A second series of experiments was made on the influence of dilution on the virulence of the sputum. The results showed that, as compared with milk, the sputum was excessively infectious, and that not even a dilution of 1:100,000 served to diminish its poisonousness, whether communicated subcutaneously, by inhalation, or by intra-peritoneal inoculation. On the other hand, 32 minims of the tubercular sputum in a dilution of 1:8 failed of any positive result when given with the food. As different specimens of sputum differ naturally in the number of bacilli contained, Gebhardt next made similar experiments with pure cultures of supposedly the same strength. The results showed that 16 minims of a dilution of 1:400,000 fully preserved its virulence, as did 8 minims of the same when inhaled. The general conclusions reached were, that the greater the amount of the tubercular poison taken into the system, the more rapidly is it spread throughout the body.

An attempt made to estimate the number of bacilli in the sputum, showed that 16 minims contained about 810,000 to 960,000. According to this estimate, about 820 bacilli are required to set up a fatal tuberculosis in a guinea-pig.

The subcutaneous connective tissue, the peritoneum, and the lungs are especially, and about equally, predisposed to the reception and increase of bacilli, while the digestive tract is decidedly more resistant. The order of the organs attacked by artificial infection is about as follows: lymphatic glands, spleen, lungs, liver, and, lastly, kidneys and genitals. The place where the disease first develops is, however, not always dependent on the port of entrance of the bacilli; *e.g.*, a pulmonary tuberculosis is not always to be attributed to an infection by inhalation.

The experiments also tend to prove the existence of an individual predisposition; since some guinea-pigs were unaffected by a stronger dilution than that which poisoned others.

It is certainly proved that a fluid may be virulent, although the few tubercle bacilli present may escape microscopic detection. Consequently the failure to discover bacilli in the sputum is not a proof of their absence, and inoculation would be a much more delicate test.

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## THE RELATION OF ARTERIAL HYPOPLASIA TO CARDIAC DISEASE.

HANDFORD (*Practitioner*, November, 1889) reports the case of a man, who had suffered for years from shortness of breath, and, finally, from ascites and general œdema. When examined there were, beside the œdema, severe orthopnœa and cough, with blood-stained sputum. There were no heart murmurs and the arterial tension was low. After death, which soon occurred, the left and right ventricles and the right auricle were found much dilated, and there was an unusual narrowness of the main arteries of the body; the aorta admitting the little finger with difficulty. The walls of the vessels, also, were thin and delicate. The author then refers to the observations of Virchow, Fraentzel, and others on congenital narrowness of the arterial system, and to the connection which this is supposed to have with chlorosis. The case reported is an illustration of cardiac hypertrophy and dilatation due to this congenital narrowness, since there was no indication of Bright's disease either before or after death. He thinks there can be no question that the result of arterial hypoplasia is to produce an eccentric hypertrophy of the heart, the intensity of this depending upon the degree of the arterial stenosis and the exertion to be undergone. In some cases, and especially in chlorosis, in which he believes it to be very common, the hypoplasia is temporary, and would be more suitably called *tardy development of the arterial system.* Between the ages of twelve and fifteen years growth proceeds with much greater rapidity in the female than in the male. It may well be that in some cases the arterial development may lag behind the requirements of the body, and that, if much physical exertion be required, cardiac dilatation may result. In his experience this dilatation is almost universal in chlorosis, and explains the frequent relapses, the failure of iron to produce more than temporary benefit, unless it be continued for so long a time that the heart's condition may undergo evolution, and the occasional total failure of iron.

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## THE DIAGNOSTIC VALUE OF SALOL IN MOTOR INSUFFICIENCY OF THE STOMACH.

J. DECKER (*Berlin. klin. Wochenschr.*, 1889, 975) reviews the investigations of Ewald and Sievers on the employment of salol as a means of detecting motor insufficiency of the stomach, and also those of Brunner and of Huber, both of which tended to prove that the test was of no great value, and that not only could the delay in the appearance of the salicylic acid reaction in the urine occur in other pathological conditions of the stomach, but that even in the normal organ could this delay be observed. Huber, indeed, took the ground that it was not the late appearance, but the long persistence of the salicylic acid reaction which characterizes an actual motor insufficiency of the stomach; and that, whereas in a healthy organ the urine answered to the test not longer than twenty-six hours after ingestion of the salol, in cases of motor insufficiency the reaction could be detected for three, six, or even more hours longer than this.

Decker has followed this same line of study, and found, as a result of seventy-eight trials on twenty-two individuals, that in healthy stomachs the time required until the first appearance of the salicylic acid reaction in the urine varied from forty-five to ninety minutes, while in gastrectasia it varied from forty-five to seventy-five minutes. As regards the persistence of the reaction he found that in the healthy stomach this lasted from twenty-two to twenty-seven hours, while in gastrectasia the duration was from twenty-seven to thirty-five hours. As, however, it is not certain but that in many cases this may be due to a retarded absorption of the salicylic acid by the intestine, he concludes that neither the late appearance nor the long persistence of the reaction in the urine is of any real value in determining the presence of motor insufficiency of the stomach.

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### ON THE PRESENCE OF SUGAR IN THE URINE.

W. M. ORD (*British Medical Journal*, November 2, 1889, 965), in discussing this subject, says that the conditions determining the presence of sugar in the urine in pathological quantities, are: 1, excessive afflux of arterial blood to the liver, and probably to other glycogenic organs; 2, defective assimilation of glucose; 3, defective formation of glycogen; 4, instability of glycogen—namely, the formation of glycogen which is too easily transformed; 5, excessive ingestion of glucose or of glucose-yielding substances.

As causes, under the first head may be mentioned: 1, vaso-motor paralysis from disease of the medullary centre or the nerves connecting it with the arteries of the liver; 2, dilatation of the hepatic artery not due to such disease, but to irritation in the liver or to reflex action from other organs—as the stomach—or to general disorder of the circulation, either functional, as a result of nerve strain or excitement, or probably also dyscrasic, as in gout; 3, possibly also compensatory hyperæmia due to undue contraction of the arteries in other parts of the body.

The author next calls attention to the influence of heredity in producing glycosuria, and relates several instances of it. It is, he thinks, certain that the disease is in some instances transmitted from parent to child. This transmission may be of the disease itself, or of the causes and conditions which predispose to it—such as gout, nervous disorders, and imperfection of the tissues. The frequent occurrence of glycosuria in persons very stout, either from inheritance, lack of exercise, or indulgence in alcohol, would indicate that both the glycosuria and the excessive fatness were marks of imperfect forms of nutrition. In addition to these causes, we cannot overlook the influence of persistent alcoholic irritation of the liver in many cases included in the group just referred to.

As examples of another nearly related group of cases, the author mentions instances of the association of granular contracted kidney with glycosuria. He has also found sugar in the urine in two cases of Raynaud's disease. Glycosuria is often present, too, in tertiary syphilis; not due to any implication of the medulla, but possibly to the irritation of the liver by the specific disease possibly to the profound alterations of the general nutrition brought about by it. The author has observed several cases in which glycosuria preceded, or was preceded by, angina pectoris, and subsequently coëxisted with it. It may be that disordered innervation is the cause of both the excretion of sugar and the angina, but the author is more inclined to consider the glycosuria due to arterial relaxation of the vessels in the liver compensatory to the excessive tension of the peripheral arteries of the limbs, neck, and head. Finally, he calls attention to an observation which he has made in a number of cases: that the artificial stoppage of the secretion of milk during lactation apparently produces a backward flow of lactose into the vessels in a quantity so large that temporary glycosuria results.

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## THE VALUE OF THE PHENYLHYDRACIN TEST FOR SUGAR.

JOSEF GEYER (*Wien. med. Presse*, 1889, No. 43, 1686) says that the use of phenylhydracin as a test for sugar was first proposed by Fischer, and has been warmly recommended by von Jaksch, who considers it very reliable for even the smallest quantities of sugar. Rosenfeld, too, has recently examined the reaction and estimates it as the most delicate and reliable. This would make the substance most valuable in the recognition of sugar, since existing methods reveal small quantities of it with difficulty. It is, therefore, very important to determine absolutely whether there is any allied substance which could produce a combination with phenylhydracin resembling phenylglycosazon. Thierfelder has already shown that hydrochlorate of phenylhydracin and the potassium salt of glycuronic acid will produce a compound when treated according to Fischer's method, which resembles and has the same characteristics as phenylglycosazon, and can easily be confounded with it. Now glycuronic acid occurs in the urine, and it is probable, as Flückiger has shown, that some one of its combinations helps to make up the reducing substance found in normal urine.

In order to elucidate the matter, Geyer has studied carefully the relations of glycuronic acid to phenylhydracin, in order to discover whether they actually formed a compound resembling phenylglucosazon. He prepared glycuronic acid by a method which he describes in detail, and found that it deviated the plane of polarized light to the right—though its compounds deviated it to the left—and reduced copper on heating in alkaline solution; both of which effects are accomplished by sugar also. The reduction of the copper by the acid, however, differed from that by the sugar in that it occurred only after prolonged boiling, and often not until cooling had taken place. Glycuronic acid or its soda salt, treated with phenylhydracin after the manner of Jaksch, gave yellow crystals so resembling in appearance and solubility those of phenylglucosazon that no difference could be detected. To apply these facts to the examination of urine, the author examined a series of specimens obtained from cases in which the phenylhydracin test had given a positive result, yet in which he thought sugar was absent. In order to determine positively whether sugar was present, he found that the examination by fermentation and by the polariscope were the only reliable methods. As these tests, however, are only delicate to 0.1 per cent. of sugar, it was first necessary to isolate and concentrate it, which he accomplished by the Abéles-Ludwig lead method. Fourteen cases were thoroughly examined, and though all of them contained a substance resembling phenylglucosazon, and gave a positive reaction with Trommer's test, only four responded to the fermentation test and with the polariscope deviated light to the right. He concludes, therefore, that phenylhydracin is not a reliable test for sugar and can give positive results with normal urine, and that fermentation and polarized light are the only accurate means at our disposal.

### TWENTY-THREE CASES OF TYROTOXICON POISONING.

D. M. CAMMANN (*New York Medical Journal*, November 23, 1889, 573) reports the cases of twenty-three children in a large institution, who within five days were taken sick with headache, nausea, vomiting, diarrhœa, and fever; these symptoms being more or less severe and lasting two or three days. All of the patients recovered.

The system of drainage and water-supply of the institution was of the most perfect description. The dietary was of the simplest kind, and was nearly the same as had been used for the last twenty-five years. During that period the institution had been remarkably free from gastro-intestinal diseases. The interval between the beginning of the attack and the time at which food had been taken varied greatly in different cases. After a careful investigation no other cause for the trouble except the milk could be found; and although the Board of Health, to whom specimens of it were referred, found no tyrotoxicon in it at this time, they had previously had trouble with the same milkman, and thirty-six cases of poisoning had been reported in persons receiving milk from his farm.

The author considers that his cases may fairly be considered instances ot tyrotoxicon poisoning, and closes his paper with some general discussion ot the subject.

## SURGERY.

UNDER THE CHARGE OF

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### THE SURGERY OF THE LIVER.

MR. LAWSON TAIT reviews (*Edinburgh Medical Journal*, October and November, 1889) his experience in hepatic surgery, giving his cases in tabulated form, and in some instances with much detail. He has performed the operation of cholecystotomy fifty-five times, and fifty-two of the patients recovered. One old woman died of suffocative catarrh some weeks after the wound was healed, and two others died of the cancer of the liver, which was,